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CLAIMS

1. A network, comprising:

a plurality of left side switches; and

a plurality of right side switches, wherein each of the plurality of left side switches are bi-directionally coupled to each of the plurality of right side switches, and wherein each of the plurality of right side switches are bi-directionally coupled to each other directly.

2. The network of claim 1, wherein the plurality of left side switches are coupled to each other bi-directionally through at least one of the plurality of right side switches.

3. The network of claim 1, further comprising:

a plurality of left end-node devices coupled to one or more of the plurality left side switches; and

a plurality of right end-node devices coupled to one or more of the plurality of right side switches.

4. The network of claim 3, wherein the plurality of left end-node devices communicate with each other across a Clos network.

5. The network of claim 4, wherein the Clos network is a rearrangeably non-blocking network.

6. The network of claim 4, wherein the Clos network is a strictly non-blocking network.

7. The network of claim 3, wherein the plurality of left end-node devices communicate with the plurality of right end-node devices across a bi-delta network.

8. The network of claim 7, wherein the bi-delta network is a constant bi-section bandwidth bi-delta network.

9. The network of claim 3, wherein the plurality of right end-node devices communicate with each other across a mesh network.

10. The network of claim 9, wherein the mesh network is a constant bandwidth mesh network.

11. The network of claim 9, wherein the mesh network is a rearrangeably non-blocking mesh network.

12. The network of claim 9, wherein the mesh network is a full mesh network.

13. The network of claim 9, wherein the mesh network is a fully non-blocking mesh network.

14. The network of claim 1, wherein communication through the plurality of left side switches and the plurality of right side switches occurs using one of IP, Ethernet, ATM, SONET, Infiniband and RapidIO.

15. The network of claim 1, wherein the plurality of left side switches and the plurality of right side switches are bi-directionally coupled such that the network comprises a Clos network, a bi-delta network and a mesh network.

16. A method, comprising:
communicating among a plurality of left end-node devices across a Clos network;
communicating between the plurality of left end-node devices and a plurality of right end-node devices across a bi-delta network; and
communicating among the plurality of right end node devices across a mesh network, wherein the Clos network and the bi-delta network and the mesh network are coupled to operate among a plurality of left side switches and a plurality of right side switches.

17. The method of claim 16, wherein communicating between the plurality of left end-node devices comprises the Clos network operating between the plurality of left side switches and the plurality of right side switches.

5      18. The method of claim 16, wherein communicating between the plurality of left end-node devices and the plurality of right end-node devices comprises the bi-delta network operating between the plurality of left side switches and the plurality of right side switches.

10      19. The method of claim 16, wherein communicating between the plurality of right end-node devices comprises the mesh network operating between the plurality of right side switches.

20. The method of claim 16, wherein the Clos network is a rearrangeably non-15 blocking network.

21. The method of claim 16, wherein the Clos network is a strictly non-blocking network.

20      22. The method of claim 16, wherein the bi-delta network is a constant bi-section bandwidth bi-delta network.

23. The method of claim 16, wherein the mesh network is a constant bandwidth mesh network.

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24. The method of claim 16, wherein the mesh network is a rearrangeably non-blocking mesh network.

25. The method of claim 16, wherein the mesh network is a full mesh network.

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26. The method of claim 16, wherein the mesh network is a fully non-blocking mesh network.

27. The method of claim 16, wherein the plurality of left side switches are coupled to each other bi-directionally through at least one of the plurality of right side switches.

28. The method of claim 16, communication through the plurality of left side

5 switches and the plurality of right side switches occurs using one of IP, Ethernet, ATM, SONET, Infiniband and RapidIO.

29. The method of claim 16, wherein the Clos network and the bi-delta network and the mesh network are superimposed to operate among a plurality of left side switches

10 and a plurality of right side switches.

30. A computer-readable medium containing computer instructions for performing a method of communicating among a plurality of left end-node devices and plurality of right end-node devices, the instructions comprising:

15 communicating among the plurality of left end-node devices across a Clos network;

communicating between the plurality of left end-node devices and the plurality of right end-node devices across a bi-delta network; and

communicating among the plurality of right end node devices across a mesh

20 network, wherein the Clos network and the bi-delta network and the mesh network are coupled to operate among a plurality of left side switches and a plurality of right side switches.

31. The computer-readable medium of claim 30, wherein communicating between

25 the plurality of left end-node devices comprises the Clos network operating between the plurality of left side switches and the plurality of right side switches.

32. The computer-readable medium of claim 30, wherein communicating between the plurality of left end-node devices and the plurality of right end-node devices comprises

30 the bi-delta network operating between the plurality of left side switches and the plurality of right side switches.

33. The computer-readable medium of claim 30, wherein communicating between the plurality of right end-node devices comprises the mesh network operating between the plurality of right side switches.

34. The computer-readable medium of claim 30, wherein the Clos network is a rearrangeably non-blocking network.

35. The computer-readable medium of claim 30, wherein the Clos network is a strictly non-blocking network.

36. The computer-readable medium of claim 30, wherein the bi-delta network is a constant bi-section bandwidth bi-delta network.

37. The computer-readable medium of claim 30, wherein the mesh network is a constant bandwidth mesh network.

38. The computer-readable medium of claim 30, wherein the mesh network is a rearrangeably non-blocking mesh network.

39. The computer-readable medium of claim 30, wherein the mesh network is a full mesh network.

40. The computer-readable medium of claim 30, wherein the mesh network is a fully non-blocking mesh network.

41. The computer-readable medium of claim 30, wherein the plurality of left side switches are coupled to each other bi-directionally through at least one of the plurality of right side switches.

42. The computer-readable medium of claim 30, wherein the Clos network and the bi-delta network and the mesh network are superimposed to operate among a plurality of left side switches and a plurality of right side switches.

43. A method, comprising:

coupling a plurality of left side switches to a plurality of right side switches with a first plurality of bi-directional links such that communication among each of the plurality of left side switches occurs across a Clos network and communication between the plurality of left side switches and the plurality of right side switches occurs across a bi-delta network; and

coupling the plurality of right side switches to each other with a second plurality of bi-directional links such that communication among each of the plurality of right side switches occurs across a mesh network.

44. The method of claim 43, wherein the Clos network is a rearrangeably non-blocking network.

45. The method of claim 43, wherein the Clos network is a strictly non-blocking network.

46. The method of claim 43, wherein the bi-delta network is a constant bi-section bandwidth bi-delta network.

47. The method of claim 43, wherein the mesh network is a constant bandwidth mesh network.

48. The method of claim 43, wherein the mesh network is a rearrangeably non-blocking mesh network.

49. The method of claim 43, wherein the mesh network is a full mesh network.

50. The method of claim 43, wherein the mesh network is a fully non-blocking mesh network.

51. The method of claim 43, wherein the plurality of left side switches are coupled to each other bi-directionally through at least one of the plurality of right side switches.